

ITU-D REGIONAL ECONOMIC AND FINANCIAL FORUM OF TELECOMMUNICATIONS/ICTS FOR ARAB STATES

Best practices in International mobile Roaming

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Best practices on mobile roaming

- **Current issues in the mobile roaming**
- **Scenarios for mobility and traffic**
- **Regulatory role and cost driven modeling to foster competition**
- **Sample cases for best practices**
- **A consumer view on options and trends**

Best practices on mobile roaming

- Current issues in mobile roaming
 - Are prices **too high** and non affordable for consumers?
 - How to treat **different service flows**: Voice, SMS, Data or Video?
 - **Role of Regulation** for better competition and consumer benefit?
 - Market dynamics among **available options** for inter-country communications?
 - Guaranties for performance and **privacy**?
 - How to benefit from countries affinity and **economy of scale**?

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Scenarios for Mobility and Roaming

A three dimensional view of roaming scenarios

- **By Type of origin destination call/services**
- **By Type of affinity among origin destination countries**
- **By Type of traffic demand per flow**

The specific combination of those scenarios will define the roaming cases to be analyzed from a techno-economic point of view

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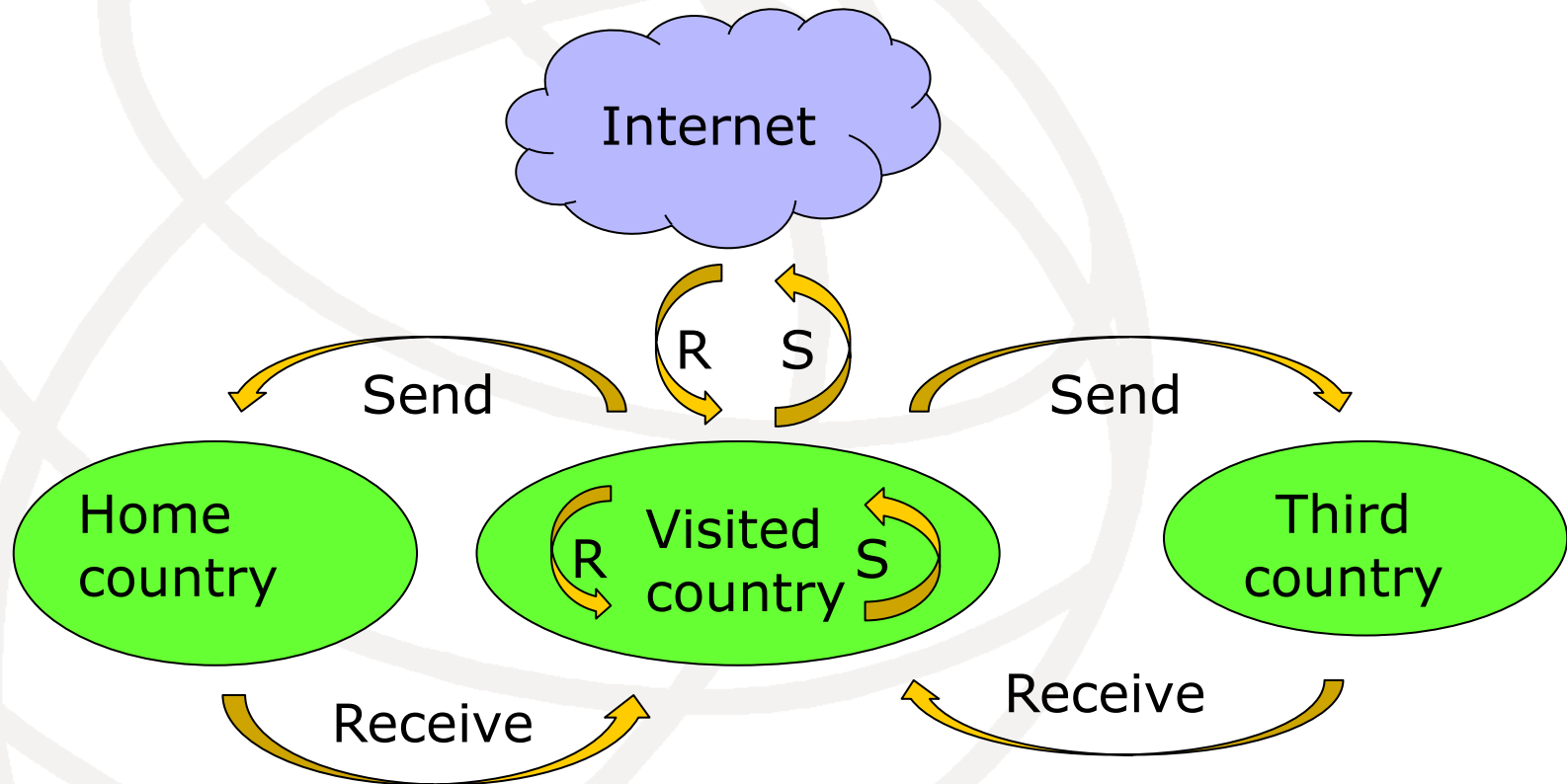
Scenarios for Mobility and Roaming

- **Type of origin destination call/services**
 - S1) Call/service from a visited country to the home country
 - S2) Call/service made locally in a visited country
 - S3) Call/service from a visited country to a third country
 - S4) Receiving a call/service in a visited country
 - S5) Send/receive to/from Internet

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Scenarios for Mobility and Roaming

- **Type of origin destination call/services**



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Scenarios for Mobility and Roaming

- **Type of affinity** among origin destination countries
 - C1) Countries with their surrounding countries
 - C2) Countries belonging to a common region or sub region with special agreements (i.e.: ASEAN, GCC)
 - C3) Countries with high affinity of economic/cultural activities and high capacity routes in the interconnection (i.e.: USA-UK)
 - C4) Countries where a multinational operator has a network and customers (i.e.: Vodafone, Etisalat)
 - C5) Other countries without special advantages on distances or affinity

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Scenarios for Mobility and Roaming

- **Type of traffic demand per flow**
 - T1) **Voice traffic** with low data volume and critical for end top end performance by **packet delay and low jitter (< 30 ms)**
 - T2) **SMS** with very **low traffic** volume/bandwidth and critical by **signaling, privacy and security** on delivery
 - T3) **MMS** with **low/medium traffic volume** and critical on **performance, privacy and security** on delivery
 - T4) **Conventional internet browsing** with **best effort** requirements
 - T5) **Video, gaming, etc.** with **high traffic volume**, high bandwidth and critical on **packet delay**

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Regulatory role and cost driven modeling

- **Regulatory role on international roaming**
 - Create **conditions to empower consumers** and reduce charges
 - Define a framework for **regulatory simplification** of the many combinations on roaming (more than 100 cases)
 - Define a **reference costing model** to guide a cost driven pricing
 - Define reference guidance for **cross borders performance, security and privacy**
 - Empower Service Level Agreements (**SLA**) initiatives at Regional & International levels

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Regulatory role and cost driven modeling

• Actions on reference guidance to empower consumers

- Provide **open information** on the roaming prices per type of scenario on public web pages
- Inform consumer on the **roaming conditions on arrival** to other countries by free of charge communication
- Facilitate easy way to **disable roaming when not required** to avoid unexpected communications
- Provide mechanisms for the consumers on **near to country borders** to explicit selection of service providers avoiding hidden implicit selections

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Regulatory role and cost driven modeling

- **Reference costing models to guide pricing**
 - Actions to regulate wholesale and retail prices based on rational costing models when prices are very divergent from reference costing.
 - Consideration of pricing per scenario type for the main communications on the 3 dimensions described above: i.e.:
 - **Home/visiting calls:** Sending or receiving between involved countries or third countries.
 - **Traffic consumption:** Voice, SMS, browsing, video
 - **Country affinity:** per geography or special relation

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Regulatory role and cost driven modeling

- **Reference costing models to guide pricing**

- **Price cap related to the home prices** taking into account country scenarios, interconnection capabilities, economy of scale, bandwidth requirements and performance: i.e.: from very low proportion like 10% on top of national price for **high affinity** countries up to a higher proportion like 50% for **low affinity** countries.
- Development of **bottom-up reference costing models** to consider a markup over the costing evaluated for the different mentioned scenarios. Principles of Technology neutrality and including Net Present Value (NPV) for all involved cost components also recognized as Total Cost of Ownership (TCO)

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Regulatory role and cost driven modeling

- **Reference costing models to guide pricing**
- **Modeling both CAPEX and OPEX for all involved network elements in the service provision like:**
 - **Per Home and Visited Network (H&V):**
 - Core and access network elements at (H&V)
 - Transit Network
 - Interconnection network elements at (H&V)
 - Home Location Register (HLR) at (H&V)
 - Visiting Location Register (VLR) at (H&V)
 - SIM card identifiers at (H&V)
 - Billing systems at (H&V)
 - Network Management and Customer Relations management (CRM)

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Regulatory role and cost driven modeling

- **Reference costing models to guide pricing**
- **Consideration of processes mainly generating OPEX:**
 - **Subscribers acquisition**
 - **Subscribers registration and activation**
 - **Marketing and promotions**
 - **Sales and contract**
 - **Collection and sending Call Data Records(CDRs)**
 - **International negotiations for roaming**
 - **Regulatory negotiation and development**
 - **General operation, planning and training**

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Sample cases :EU

- **Started at 2002** with definition of a Framework and ex-ante regulation for operators with dominance
- The National Regulation Authorities identified very high prices for roaming and **first roaming regulation appears at 2007**
- A second regulation on Roaming was defined at **2009 with extension to SMS and reducing CAPs** incorporating a monitoring obligation. The Body of European Regulators for Electronic Communications (**BEREC**) had the responsibility for the regular reviews and monitoring **compliance**
- A third regulation on Roaming was agreed at **2012** with commitments to the member states and structural measures **separating sale of roaming services** and allowing for MVNO

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Sample cases :EU

- Roaming regulations were considered as a strong legal instruments under the Treaty of the European Union
- The EU used the Mobile Termination Rate (MTR) as a reference to define the regulated roaming price.
- As a parallel evaluation, BEREC performed a bottom-up estimation of **major components of involved costs** to have a guide of reference costs. This is based on information from the National Regulators that **has to be updated for** the new functionalities, technologies and a **more complete modeling**

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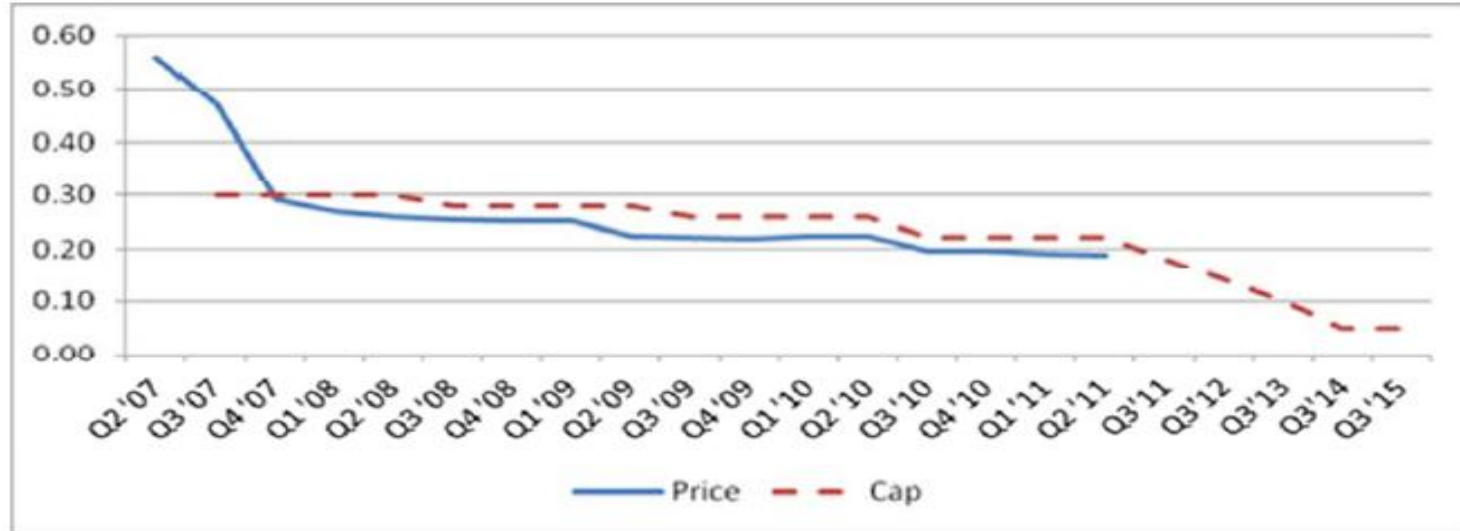
Sample cases

- Evolution of prices at the EU derived from regulation

Wholesale case for Voice (EUR)

	Before 1 July 2012	1 July 2012	1 July 2013	1 July 2014
Data (per MB)	0.50	0.25	0.15	0.05
Voice (per minute)	0.18	0.14	0.10	0.05
SMS (per SMS)	0.04	0.03	0.02	0.02

Source: BEREC and price cap information



Source: BEREC and price cap information

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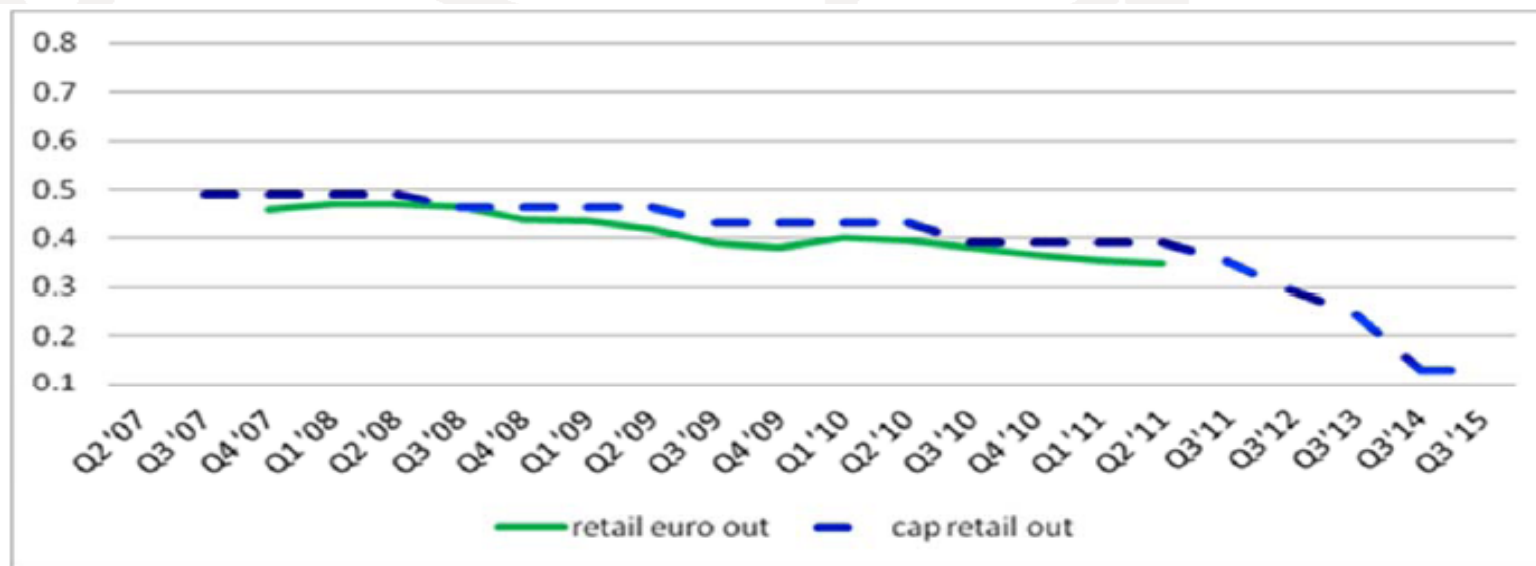
Sample cases

- Evolution of prices at the EU derived from regulation

Retail case for Voice (EUR)

	Before 1 July 2012	1 July 2012	1 July 2013	1 July 2014
Data (per MB)	None	0.70	0.45	0.20
Voice-calls made (per minute)	0.35	0.29	0.24	0.19
Voice-calls received (per minute)	0.11	0.08	0.07	0.05
SMS (per SMS)	0.11	0.09	0.08	0.06

Source: BEREC and price cap information



Source: BEREC and price cap information

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Sample cases: Arab Region

- The Arab Regulators Network (**AREGNET**) was established in **2003** in order to coordinate efforts and interchange experiences
- A study performed in **2005** by the General Secretariat Arab Council of the Telecom Ministers revealed that **roaming prices were specially high**: between 15% up to 500% higher than local calls terminated in fixed networks and between 15% up to 700% for calls terminated in mobile networks
- Due to the lack of homogeneity of countries within the Region and asymmetric traffic behavior a selection of similar calls was made for the evaluations

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Sample cases: Arab Region

- A set of formulas were defined for the prices evolution within 3 years of the wholesale prices and a **30% retail roaming markup** was established.
- A further subgroup of the AREGNET : Gulf Cooperation Countries (GCC) was created to coordinate a framework in a heterogeneous countries and manage the downward of roaming prices. Margin of variation among countries **was defined as +/- 15%**
- Additional steps are conducted to incorporate SMS/MMS and Data roaming charges in the regulation

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Sample cases: Arab Region

- Evolution of prices (USD) in the case of Oman is given below:

Oman Mobile Roaming Prices	June 2010 (R.O/min)		1st Feb 2012 (R.O/min)		Reduction%	Reduction%
Visited country /network	Local call	International call to GCC while roaming	Local call *	International call to GCC while roaming*	Local call *	International call to GCC while roaming*
UAE - du	1.01	1.21	0.27	0.66	-73%	-45%
Bahrain - zain	1.12	1.42	0.27	0.66	-75%	-54%
KSA - all networks	1.15	1.79	0.27	0.66	-76%	-58%
Qatar- Qtel	1.23	1.61	0.27	0.66	-78%	-59%
Kuwait - Watinya	1.13	1.58	0.27	0.66	-76%	-58%

Source: TRA (Oman's regulatory authority).

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Sample cases: ASEAN countries

- The Association of Southeast Asian Nations (ASEAN) Ministers for Communications start to work **in 2011 on a common roaming policy** within the 10 member countries.
- Agreements were implemented on a **bilateral mode**: i.e.: Malaysia –Singapore and further multilateral agreements incorporating Brunei and others.
- The Infocomm Development Authority of Singapore (IDA) proposed the definition of a **Premium Rate Service** that considers a transparency on rates and limiting factors to control expenses
- After recognizing high roaming prices Singapore and Malaysia were able to **reduce rates of voice in 30% and SMS in 50%**

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Sample cases: ASEAN countries

- **Singapore to Malaysia roaming rates in USD**

Singaporeans travelling to Malaysia	1 January 2011	From 1 May 2011	From 1 May 2012
Receiving an incoming call	0.56-0.80	0.45-0.64	0.39-0.56
Call to a Malaysian number	0.40	0.32	0.28
Call to a Singapore number	0.47	0.41	0.37
SMS	0.48-0.49	0.33-0.42	0.24-0.25

Source: IDA (Axiata elaboration)

- **Malaysia to Singapore roaming rates in USD**

Malaysians travelling to Singapore	1 January 2011	From 1 May 2011	From 1 May 2012
Receiving an incoming call	0.65-0.81	0.52-0.65	0.45-0.24
Call to Singapore number	0.57-0.78	0.45-0.62	0.40-0.55
Call to a Malaysian number	1.27-1.57	1.01-1.26	0.89-1.10
SMS	0.32	0.23	0.16

Source: MCMC (Axiata elaboration)

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Sample cases:

Multinational presence: Etisalat

Voice Call Type Visited Country: Location of roaming customer Charges in United Arab Emirates Dirham (AED)*

	GCC Countries AED/Min	Rest of the World AED/Min
Incoming Call	1.25	4.25
Outgoing Voice Call to UAE	2.4	9.50
<i>Outgoing Local Voice Call</i>	<i>1</i>	<i>4.50</i>
<i>Outgoing Voice Call to Others</i>	<i>9</i>	<i>13</i>
<i>Outgoing SMS</i>	<i>1.25</i>	<i>2</i>

Data roaming charges: AED 1/30 KB (postpaid), AED 1.5/30 KB (Prepaid). If roaming in Lebanon, a rate of AED 1/10 KB applies for both postpaid & prepaid roamers

*Ratio AED to USD in October 2014: 0,2722)

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Sample cases:

Multinational presence: Vodafone

- Vodafone World rates for Mobile in UK Pounds*. Also alternative tariffs apply like EuroTravellers, WorldTravellers, etc.

	Making calls (Per minute)	Receiving calls (Per minute)	Sending text (per text)	Sending picture messages (per message)	Using mobile data (per MB)
Europe Z1 (EU)	18,7p	4,9p	5,8p	19,8p	19,8p
Europe Z2 (non EU)	24,5p	7,1p	8,1p	37p	45,9p
Asia Pacific	80p	75p	35p +UK rate	37p	3£ ≤ 5Mb
USA& Canada	1,35£	1£	35p+UK rate	37p	3£ ≤ 5Mb
Rest of the World Z1	1,65£	1,30£	35p+UK rate	37p	3£ ≤ 5Mb
Rest of the World Z2	2£	1,50£	50p+UK rate	37p	5£ ≤ 5Mb

(*Ratio £ to USD in October 2014: 1,60)

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Consumer view on options and trends

- **Consumer options and actions to reduce costs (I):**
 - **Local SIM card:** Requires a local SIM card with an unlocked mobile terminal working in multiple bands and a new number that has to be communicated to frequent callers
 - **Local Wi-Fi access :** Access to VoIP or data applications through a data network using **local Wi-Fi access** when application installed at the smart terminal. Example of Skype, Line, etc.
 - **OTTs applications:** Access to VoIP or data applications or through the **local mobile data network** from the mobile smart terminal directly when application installed. Example of Skype, Line, etc.

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Consumer view on options and trends

- **Consumer options and actions to reduce costs (II):**
 - **International SIM card:** Also called multiple-SIM card approach with a single identity that operates with local tariffs in most countries with some potential restrictions on call forwarding: Example: WorldSIM, roamline, Lebara, etc.
 - **Global carrier:** Single identity card from a Global carrier that assures the selection of lowest roaming costs automatically for the consumer: Example: Truphone covering more than 200 countries
 - **International package** within a bundle offer: Offers by the home service provider including lowest prices or flat tariffs for specific regions or countries with advance notice. Example: Vodafone, Movistar, etc.

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Consumer view on options and trends

- **Consumer options and actions to reduce costs (III):**
 - **Real time messaging: Co-lateral applications** not using direct voice but passing messages instantaneously either directly from the mobile or by a terminal with WiFi connection: Example of WhatsApp, Facebook chat, etc.
 - **Cost control function:** Application installed at the terminal that notifies customer current consumption or defines consumption limits to allow user cost management .
Example: Telicost by Bell Canada

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Summary of Key Factors

- Analyze the most frequent scenarios by combination of **call flow, country affinity and traffic load**
- Have consumer rights and **competitive positioning** as main drivers
- Apply **markup and/or bottom-up analysis** to guide regulatory actions to relate prices to costs
- Watch **optional international solutions** and OTTs services as alternatives/competitors

Additional content: International mobile roaming services: Facilitating competition and protecting users. ITU-TDS. Regulatory and Market Environment. November 2013

International Telecommunication Union

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